CLAIMS

What is claimed is:

1. A system for querying heterogeneous data sources distributed over a network, said system comprising:

a request translator for translating a request having an associated data context into a query having at least a second data context associated with at least one of the heterogeneous data sources; and

a data translator which translates received data from the data contexts associated with the heterogeneous data sources into the data context associated with the request.

2. The system of claim 1 wherein the request is received by said request translator.

3. The system of claim 1 wherein the request is generated by said request translator.

4. The system of claim 1 wherein said request translator determines at least one heterogeneous data source to query based on the request.

5. The system of claim 4 wherein said request translator determines at least one heterogeneous data source to query based on an ontology.

6. The system of claim 4 wherein said request translator detects a difference between the context of data requested by the request and the context of data supplied by the data source and converts the data context of the request into the data context of the data source.

7. The system of claim 6, wherein the conversion is accomplished by a pre-defined function, a look-up table, or a database query.

8. The system of claim 1 wherein said request translator optimizes the query.

9. The system of claim 1 further comprising a query transmitter which queries at least one of the heterogeneous data sources using the query.

10. The system of claim 9 wherein said query transmitter optimizes the query.

11. The system of claim 9 wherein said query transmitter separates the query into a plurality of sub-queries and queries at least one of the heterogeneous data sources using the sub-queries.

12. The system of claim 11 wherein the query transmitter queries a different data source with each one of the sub-queries.

Sub A4

13. The system of claim 1 wherein said data translator translates received data into the data context of the request using a pre-defined function, a look-up table, or a database query.

14. A method for querying heterogeneous data sources over a network, said method comprising the steps of:

(a) translating a request having an associated data context into a query having at least a second data context associated with at least one of the heterogeneous data sources to be queried; and

(b) translating received data from the data contexts associated with the heterogeneous data sources into the data context associated with the request.

17

15. The method of claim 14 further comprising the step of receiving a request before step (a).

16. The method of claim 14 further comprising the step of generating a request before step (a).

17. The method of claim 14 further comprising before step (a) the step of determining at least one heterogeneous data source to query based on the request.

18. The method of claim 17 further comprising before step (b) the step of determining at least one heterogeneous data source to query based on an ontology.

Sub A5

19. The method of claim 17 further comprising the steps of:

detecting a difference between the context of data requested by the request and the context of data supplied by the data source to be queried; and

converting the data context of the request into the data context of the data source.

20. The method of claim 19 wherein the data context of the request is converted into the data context of the data source using a pre-defined function, a look-up table, or a database query.

21. The method of claim 14 further comprising before step (b) the step of optimizing the query.

22. The method of claim 14 further comprising the step of querying at least one of the disparate data sources using the translated request.

23. The method of claim 22 wherein said optimization step further comprises:

separating the query into a plurality of sub-queries; and

18

querying at least one of the heterogeneous data sources using the sub-queries.

24. The method of claim 23 wherein said querying step further comprises querying a different data source with each one of the sub-queries.

Sub A6

25. The method of claim 14 wherein step (b) further comprises translating received data into the data context of the request using a pre-defined function, a look-up table, or a database query.

26. An article of manufacture having computer-readable program means for querying heterogeneous data sources over a network embodied thereon, the article comprising:

computer-readable program means for translating a request having an associated data context into a query having at least a second data context associated with at least one of the heterogeneous data sources to be queried; and

computer-readable program means for translating received data from the data contexts associated with the heterogeneous data sources into the data context associated with the request.

27. The article of manufacture of claim 26 further comprising computer-readable program means for receiving a request.

28. The article of manufacture of claim 26 further comprising computer-readable program means for generating a request.

29. The article of manufacture of claim 26 further comprising computer-readable program means for determining at least one heterogeneous data source to query based on the request.

30. The article of manufacture of claim 29 wherein the determination of at least one heterogeneous data source to query is based on an ontology.

31. The article of manufacture of claim 29 further comprising:

computer-readable program means for detecting a difference between the context of data requested by the request and the context of data supplied by the data source; and

computer-readable program means for converting the data context of the request into the data context of the data source.

32. The article of manufacture of claim 31 wherein said computer-readable program means for converting the data context of the request into the data context of the data source comprises a pre-defined function, a look-up table, or a database query.

33. The article of manufacture of claim 26 further comprising computer-readable program means for optimizing the query.

34. The article of manufacture of claim 26 further comprising computer-readable program means for transmitting the query to at least one of the heterogeneous data sources.

35. The article of manufacture of claim 26 further comprising computer-readable program means for optimizing the query.

36. The article of manufacture of claim 26 further comprising computer-readable program means for separating the query into a plurality of sub-queries and computer-readable program means for querying at least one of the heterogeneous data sources using those sub-queries.

37. The article of manufacture of claim 26 further comprising computer-readable program means for querying a different data source with each one of the sub-queries.

38. The article of manufacture of claim 26 wherein said computer readable program means for translating received data into the data context of the request comprises a pre-defined function, a look-up table, or a database query.